

August 15, 2012

ATTACHED NOTES

ORIGINAL

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Washington, D.C.

In the Matter of

DETERMINATION OF RATES AND TERMS
FOR PREEXISTING SUBSCRIPTION AND
SATELLITE DIGITAL AUDIO RADIO
SERVICES

)
)
)
) Docket No. 2011-1
) CRB PSS/Satellite II
)
)

CORRECTED WRITTEN REBUTTAL TESTIMONY OF DR. MICHAEL A SALINGER

(On behalf of Sirius XM Radio Inc.)

I. Qualifications

1. I am the Jacqueline C. and Arthur S. Bahr Professor of Management and Professor of Economics at the Boston University School of Management and a Senior Academic Adviser to Charles River Associates (CRA), a company that among other activities provides economic analysis for legal and regulatory proceedings. From July 2005 through June 2007, I took a leave of absence from Boston University to serve as Director of the Bureau of Economics at the United States Federal Trade Commission (FTC).
2. I joined the Boston University Faculty in 1990. Most of the courses I have taught have been in managerial economics or statistics. I have also taught business history, health care economics, and health care finance. I have been faculty director of the undergraduate business program, faculty director of the undergraduate honors program in the School of Management, and chairman of the

Department of Finance and Economics. Prior to joining the Boston University faculty, I was an associate professor at the Graduate School of Business at Columbia University.

3. As Director of the Bureau of Economics, I oversaw an organization with 70 Ph.D. economists who provided the economic analysis to support the Commission's enforcement of the antitrust laws and consumer protection laws; and I was responsible for the recommendation of the Bureau of Economics to the Commission on all matters.
4. My affiliation with CRA started in April 2011. From July 2007 through March 2011, I was a Managing Director of LECG, which used to be a competitor to CRA.
5. I received my BA, *magna cum laude* and with honors in economics, from Yale University in 1978. I received a Ph.D. in economics from the Massachusetts Institute of Technology in 1982. My area of specialization within economics is "industrial economics" (or "industrial organization"), the area of economics most closely related to antitrust and business regulation. I have published on a wide variety of topics related to antitrust and business regulation and have served on the editorial boards of both *The Journal of Industrial Economics* and *The Review of Industrial Organization*, two journals that specialize in publishing academic articles on industrial economics. Because they are particularly relevant for my testimony, I note that two of my published articles concern the estimation and use of Tobin's q and one concerns how to incorporate costs of durable assets into the cost of a unit of output. One of my articles on Tobin's q was based on my doctoral dissertation, which was entitled, "Tobin's q , Monopolistic Behavior, and the Determinants of Monopoly Power."
6. I have testified twice before the Copyright Royalty Board (CRB) and twice before a Copyright Arbitration Royalty Panel. Most recently, I testified on behalf of Live365 in the *Webcasting III* proceeding. My prior CRB testimony and my

CARP testimonies were all on behalf of Devotional Broadcasters with respect to the distribution of royalties paid by cable systems for the retransmission of distant broadcast signals. My consulting experience also includes work on behalf of Turner Broadcasting with respect to reasonable royalties for cable networks to pay ASCAP for performance rights.

7. For further details on my qualifications, see my curriculum vitae, which is attached as Appendix A to this testimony.

II. Assignment

8. Counsel for Sirius XM Radio Inc. (“Sirius XM” or the “Company”) has asked me to review the testimony of Dr. Janusz Ordovery in this proceeding and to assess whether I agree with his conclusion that a royalty rate in the range of 22.32% to 32.50% would be reasonable under the four statutory criteria in this proceeding and the logic by which he arrived at that conclusion.¹ With respect to Mr. Sidak’s testimony, they have asked me to review his conclusion that Sirius XM has monopoly power, that it gained this monopoly power as a result of the merger of Sirius Satellite Radio Inc. (“Sirius”) and XM Satellite Radio Inc. (“XM”), and that the monopoly power it allegedly gained as a result of the merger justifies the increased royalty rate Sound Exchange is requesting.²
9. Appendix B contains a complete list of materials I have relied on. I base my opinions below on my review of those materials, my understanding of the Section 801(b)(1) criteria, and my general knowledge of economics. For my work on this matter I am being compensated at the rate of \$750 per hour.

¹ SoundExchange Inc. Third Corrected and Amended Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1, CRB PSS/Satellite II, Statement of Janusz Ordovery, June 13, 2012. (Ordovery), ¶9.

² SoundExchange Inc. Written Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1, CRB PSS/Satellite II, Amended and Corrected Testimony of J. Gregory Sidak, March 26, 2012 (Sidak).

10. My work on this case is on-going. I reserve the right to augment or modify my opinions as new information becomes available.

III. Summary of Conclusions

11. My principal conclusions are as follows:

1. Dr. Ordoover's estimates rest critically on the assumption that the contracts that would emerge in a competitive unregulated market for music rights for satellite radio would entail the same percentage of revenue as Dr. Ordoover observes in the market for music rights for interactive internet music services. This assumption is implausible even as an approximation. It ignores both the substantial portion of the price of satellite radio services that represents payment for the distribution system and the likelihood that owners of the intellectual property concerned (*i.e.*, music rights) would charge a premium for the higher-quality access inherent in interactive services compared with non-interactive services. Without this assumption, which he does not, and in my opinion cannot, justify, his calculations of reasonable rates collapse.
2. Dr. Ordoover's written testimony contains a discussion of whether the first three statutory criteria imply a free market standard or, alternatively, require some adjustment from free market rates. Even if Dr. Ordoover's points about how the statutory criteria relate to free market rates made economic sense, they would not be a compelling defense of his estimates. The fundamental flaw in Dr. Ordoover's estimates is his inference of free market music royalty rates for satellite radio from observed music royalty rates for interactive internet music services. That flaw is a matter of economics, not statutory interpretation.
3. At that, Dr. Ordoover's points about the relationship between the free market rates and the statutory criteria do not make economic sense. Much of his discussion concerns sunk costs, and his opinion that the CRB should consider Sirius XM's sunk costs only in the context of the fourth statutory criterion

implies that the CRB should ignore them, *i.e.*, treat them as not being costs at all. As a matter of economics, however, the second and third statutory criteria require that the music royalty rates for satellite radio leave a substantial portion of the monthly subscription fee to cover the long run cost of Sirius XM's investment in its distribution assets (which is one of its primary contributions to the provision of satellite radio service).

4. Allocating a portion of Sirius XM's monthly subscription price to cover the long run cost of its distribution network does not guarantee Sirius XM a satisfactory (or any financial) return on its investment. The observation that firms in unregulated markets sometimes fail to earn a satisfactory return on investment does not justify ignoring sunk costs or considering them only to the extent that a royalty rate might be disruptive.
5. Mr. Sidak estimates Tobin's q for Sirius XM to be substantially above 1 and concludes from this result that Sirius XM has monopoly power. By using the book value of Sirius XM's assets as the denominator, Mr. Sidak's estimate of Tobin's q is substantially too low. More fundamentally, however, even if Tobin's q were above 1 for Sirius XM, that would not prove that it has monopoly power. A value of Tobin's q above 1 means that a firm has earned above a competitive rate of return. Since firms in competitive industries take the risk of earning less than a competitive rate of return (and therefore having a value of Tobin's q below 1), they need to have the prospect of earning above a competitive rate of return as inducement to risk a loss. Since Tobin's q can exceed 1 for firms in a competitive industry, even a reliable estimate that Tobin's q is above 1 does not prove market power.
6. The other piece of evidence that Mr. Sidak puts forward as evidence that Sirius XM has monopoly power is its imposition of the Music Royalty Fee ("MRF") and its recent price increase from \$12.95 to \$14.49. This inference is an example of *post hoc ergo propter hoc* reasoning. XM Planning

documents prepared as early as 2005 projected an increase in the monthly subscriber rate to \$14.95 in 2009.³ Sirius XM's agreement with the Federal Communications Commission (the "FCC") not to increase certain prices as a condition for regulatory approval of the Sirius and XM merger delayed an increase that likely would have occurred anyway.⁴ The imposition of the Music Royalty Fee reflected an increase in marginal cost, which is what one would expect under competition. Moreover, because the vast majority of XM and Sirius use is in cars and because no vehicles are factory-equipped with both an XM and a Sirius radio, it is not clear why one would expect the merger to provide an opportunity to increase prices.

IV. Dr. Ordoover's Testimony – Summary and Critique

12. In this section, I explain Dr. Ordoover's calculation, the key assumption underlying it, and the reason the assumption is inappropriate.

A. Dr. Ordoover's Calculation

13. Whatever else one makes of Dr. Ordoover's testimony, it has the virtue of being simple. His base calculation of an appropriate range of royalties relies on just five assumptions/assertions:
 1. The appropriate economic interpretation of the first three 801(b)(1) criteria is the rate that willing buyers and willing sellers would agree to in a free market for music rights for satellite radio.

³ SXM_CRB_DIR_00000011, "LTP v6.xls."

⁴ Declaration of Melvin Karmazin, In the Matter of: Carl Blessing on behalf of Himself and Others Similarly Situated v. Sirius XM Radio Inc. before the United States District Court for the Southern District of New York, No. 1:09-cv-10035-HB ECF CASE, January 18, 2011, ¶5. (Karmazin)

2. The best benchmarks to determine these prices are contracts between major music labels and interactive internet music services because they are free market rates.
 3. Interactive internet music services pay royalties of approximately 60-65% of their subscriber revenues.
 4. Interactive internet music services transmit only music. Satellite radio has both talk and music content. Talk and music account for approximately equal shares of the value users get from satellite radio.
 5. If satellite radio programming consisted only of music then, absent a compulsory license, the competitive license fees negotiated between satellite radio and music labels in a competitive market would be the same percentage of revenue as in the market for music rights for interactive internet radio. As a shorthand, I will refer to this assumption as the “constant percentage of revenue” assumption.
14. Based on these assumptions, Dr. Ordoover estimates that, absent a compulsory license, the competitive license fees negotiated between satellite radio and music labels in a competitive market would be between 30-32.5%, computed as half of the range from 60%-65% that he found in the interactive internet radio agreements he examined – an adjustment solely to account for the substantial non-music content on Sirius XM (Ordoover, ¶39).
15. Dr. Ordoover purports to provide two alternative estimates of a reasonable rate. One is in effect the same calculation. The other uses what Dr. Ordoover calls an “interactivity adjustment” to his benchmark rate. This yields a lower, but still flawed, estimate and, as discussed below, still assumes a royalty rate equal to 60% of revenue.

B. The Problem with Dr. Ordoover’s Testimony

16. Just as it is simple to explain Dr. Ordoover’s testimony, it is simple to explain the problem. His estimates of a reasonable royalty rest on the assumption that absent

a compulsory license, the royalties that would be determined in a competitive market for music licenses for satellite radio would entail the same percentage of revenue as he observes in the market for interactive internet music services, *i.e.*, on his “constant percentage of revenue” assumption (Ordovery, ¶57).

17. I assume for the sake of argument (subject to the qualifications I discuss in Section VII, *infra*) that the Section 801(b)(1) factors are consistent with a free-market standard. It is important to be clear, however, on what such a standard means. Ideally, the rate to be determined is the one that would be “negotiated between Sirius XM and copyright holders in an arms’ length setting for access to a record company’s entire catalog of music for use on Sirius XM’s satellite radio service.” (Ordovery, ¶7)⁵ The question one needs to address with respect to Dr. Ordovery’s methodology is what the observed rates in the (presumably unfettered) market for music rights for interactive internet music services indicate about what rates would be in an unfettered market for music rights for satellite radio.
18. The answer is that music royalties for satellite radio should be a substantially smaller percentage of revenue (even after adjustment for non-music content on satellite radio) than they are for interactive internet music services. Dr. Ordovery simply assumes that music royalties would generally be a constant percentage of revenue across different services. But this is plainly wrong for two reasons. First, Sirius XM and interactive music services have vastly different cost structures. The former includes a delivery platform while the latter does not. Applying the interactive services percentage of revenue rate to Sirius XM would effectively give record labels a share of revenues that have nothing to do with the sound recording rights they are licensing. Second, Sirius XM and interactive music services require different rights from labels. The rights that Sirius XM requires

⁵ In fact, as Dr. Noll discusses in far more detail in his testimony, Sirius XM has negotiated licenses directly with a substantial number of independent music labels.

are substantially less valuable than those that interactive services require.

Consequently, Sirius XM should pay less for the less valuable rights.

19. The record in this case contains evidence in support of both major reasons why Dr. Ordovery's "constant percentage of revenue" assumption is implausible. With respect to the importance of the cost of distribution technology, Dr. Noll has testified about the licenses between Cricket and the four major record companies for its interactive music service bundled with cellular telephone service in a single-price package.⁶ The music service provided by Cricket is similar to standalone interactive internet music services that pay royalty rates of 60% - 65% of revenue, equating to monthly music royalty payments of between \$6.00 and \$6.50 per subscriber. As detailed in Dr. Noll's report, the Cricket licenses set royalties as the greater of [REDACTED] per subscriber per month and, because of the higher bundle price, [REDACTED] of gross revenues. In other words, because of the higher retail prices of \$55 and \$65 per month for the Cricket bundle, the licensing terms call for a much lower percentage of revenue royalty rate. Nevertheless, the licensing terms imply payments to the labels of between [REDACTED] per subscriber per month, essentially the same dollar amount as the standalone interactive services. (Noll, Table 2.3)
20. This example clearly illustrates how a benchmark rate for one service can properly be used to set a target rate for another service. Cricket is licensing the same rights that interactive internet radio services license. Establishing comparable rates for the target (Cricket) from the benchmark (interactive internet music services) entails charging the same price, not the same percentage of

⁶ Sirius XM Radio Inc. Revised Amended Written Direct Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1 CRB PSS/Satellite II, Statement of Roger G. Noll, May 17, 2012 (Noll). Cricket is a popular and significant interactive service. According to documents produced by WMG, [REDACTED]

[REDACTED] See SX02 00088977-SX02 00089061, at SX02 00089011, 00089015.

**Restricted – Subject to Protective Order in
Docket No. 2011-1 CRB PSS/Satellite II**

revenue.⁷ If the music rights for satellite radio were equivalent to the music rights for interactive internet radio – which they are not – then the appropriate way to determine a target rate would not be to simply apply the same percentage of revenue rate to the different retail price of Sirius XM, but rather to set the rate so as to equalize the price per subscriber.

21. Of course, Sirius XM is a non-interactive service rather than an interactive service, and the interactivity has a substantial effect on the appropriate royalty. Dr. Noll has presented evidence that music royalty rates for non-interactive services are dramatically lower than for interactive services (Noll, p. 8). His testimony reports the terms of contracts between internet music services and record companies for different service tiers provided by the same internet music provider.⁸ As an example, consider his Table 2.2b, which reports the terms of Slacker's license with EMI for digital transmission. In particular, compare the terms in column (2) for subscription, non-interactive service (without advertising) with those in column (4) for interactive services (without the complication created by carrier fees). For non-interactive service, the music royalty is 4.4% of revenue. For interactive service, the music royalty is 8.8% of revenue.⁹

⁷ The ambiguity as to whether to define the price of music rights as a price per subscriber or a price per play does not change the point that the appropriate way to translate a benchmark price into a target price is to equalize the price for essentially equivalent rights.

⁸ The pieces of evidence provided by Dr. Noll are not isolated examples. For example, over time, the price of computer hardware has dropped dramatically so that the price of a typical personal computer or laptop is much lower than it once was (see Dell Inc. Form 10-Ks, 2001-2012). If Dr. Ordover's constant percentage of revenue assumption applied to this instance of hardware and intellectual property, then Microsoft would have reduced the price of its Windows operating system proportionately to the price of personal computers. It has not done so (see Microsoft Corporation Form 10-K, 2001-2011).

⁹ As Dr. Noll explains in the body of his testimony, the music royalty for the non-interactive service could exceed 4.4% of revenue if users streamed enough tracks that Slacker paid under the per-play prong of the revenue formula, but the number would have to be much larger than it appears to have been in practice, and in any event would only increase the effective rate marginally above 4.4%.

22. As a matter of economic logic, Dr. Ordoover's "constant percentage of revenue assumption" makes little sense. These examples are evidence that in addition to its logical defects, the assumption does not reflect market reality.

C. Dr. Ordoover's Alternative Estimates

23. Having put forward calculations that use a deeply flawed assumption to suggest music royalties for satellite radio of 30% - 32.5%, Dr. Ordoover then presents two alternative estimates to create the appearance that his estimates are robust as compared to alternative approaches. His first alternative is not materially different from his base calculation. For his base calculation, Dr. Ordoover computed music royalties as percentage of revenues for different combinations of time periods, interactive services, and record labels. The range of 60% to 65% underlying his base estimate was based in effect from eyeballing the results and asserting that the middle range of the distribution was 60% to 65%. His first "alternative" is based on his calculation that the average monthly royalty per subscriber in his sample was \$5.95 or 59.6% of the \$9.99 average monthly subscription rate. Substituting the actual average royalty rate for his eyeball estimate of the middle range is a technical correction, not an alternative methodology that serves as a robustness check.¹⁰
24. Dr. Ordoover's other alternative approach in this section is somewhat different. As with his other estimate(s), he starts with the interactive service royalty as his benchmark.¹¹ He then purports to adjust it for interactivity by multiplying the per-subscriber fee by the ratio of his estimates of the average monthly

¹⁰ To put the point even more starkly, the calculation underlying the bottom of the range in Dr. Ordoover's base calculation is $60\% \times 0.5 = 30\%$. The calculation underlying his so-called alternative is $\$5.95/\$9.99 \times 0.5 = 29.8\%$. Since $\$5.95/\9.99 is effectively 60%, the two calculations are effectively identical. Contrary to Dr. Ordoover's assertion (Hearing Transcript, June 14, 201, at 2422-23), this is true regardless of the retail price of the satellite service.

¹¹ He uses the dollar rather than percentage rate, but that is an inessential detail.

subscription prices of non-interactive and interactive internet music services (\$4.86/\$9.99). From these estimates, he calculates a royalty rate for Sirius XM of \$2.89 per subscriber per month (Ordoover, ¶55).

25. This methodology corrects one but only one of the two fundamental problems with Dr. Ordoover's base calculation. By effectively applying the 60% royalty rate to the price of an internet-delivered non-interactive service (60% x \$4.86) rather than to the implicit price of the Sirius XM music channels (\$6.475), this approach tacitly takes into account the differences in delivery costs between the internet-delivered services and Sirius XM. But the problem remains that this approach maintains the "constant percent of revenue" assumption despite the fact that we would not expect music rights of much different value to command the same percentage of the retail price.

D. Dr. Ordoover's Choice of Benchmark

26. Both of Dr. Ordoover's calculations rely on royalty rates for interactive music services as the benchmark, his rationale being that those rates are market-determined. To this point, I have focused my criticisms of Dr. Ordoover's testimony on why his adjustments are inadequate. On one level, criticisms of a benchmark and of the adjustments are one and the same. A benchmark is valid if and only if suitable adjustments are available. Since I do not see any reliable way to adjust the royalties for interactive internet music services to get a reasonable royalty for satellite radio, one might reasonably ask what benchmarks would be superior.
27. Rates for non-interactive internet radio are one possibility. The music rights for satellite radio are more similar to the music rights for non-interactive internet radio. This is important for two reasons. One is a matter of fairness. Ultimately, consumers pay the royalty rates. If, say, non-interactive internet radio services pay \$0.75/month per user for music royalties, why should satellite radio providers

(and their users) pay either less or more for what are in effect the same rights?

The other related reason is that satellite radio and non-interactive internet radio compete with each other. Both from the perspective of the statutory criteria and a broader public policy perspective, it is desirable that the music royalty rate not distort the competition. To accomplish that objective, satellite radio should pay the same dollar amount per subscriber as the non-interactive internet radio services that offer a product that is most similar to the music channels provided by satellite radio.

28. I also consider the direct licenses that Sirius XM has entered into with record labels to provide relevant information that calls into question Dr. Ordovery's choice of the interactive services as his benchmark. While Dr. Ordovery appears to denigrate the direct licenses as somehow being tainted by regulatory overhang, information from markets that are subject to a compulsory license at regulated prices can provide relevant information about a free market rate. When the price is above the competitive price, individual suppliers have an incentive to undercut the market price in order to secure additional business. This price cutting to secure more business is the competitive process at work, and the incentives underlying it are present whether the prevailing price stems from an unfettered market or whether it is a regulated price. This phenomenon is precisely what we have seen with the direct licenses Sirius XM has signed with record labels. The willingness of record labels to undercut the existing regulated rate to obtain more business (*i.e.*, plays) is evidence that existing rates are above competitive levels.
29. When a regulator sets a rate above a competitive level, it is in the collective interest of the industry for all sellers to maintain the regulated rate. This is so even if every one of them would individually cut their price to obtain more business if they could do so without inducing their competitors to cut prices as well. Dr. Noll addresses the record evidence demonstrating this phenomenon at work here. The fact that a substantial number of record labels have seen fit to undercut the existing statutory rate notwithstanding the industry pressure not to do

so should, in my opinion, make the CRB reluctant to raise the rate at all, much less to anywhere near the level that Dr. Ordoover suggests would be reasonable.

E. Reprise

30. Dr. Ordoover's testimony concerning reasonable rates turns critically – whatever his approach – on his “constant percentage of revenue” assumption. As both the record evidence in this case and external evidence demonstrate, however, we should expect music royalties as a percentage of revenue to be *far* lower for satellite radio than for interactive internet music services. Because the “constant percentage of revenue” assumption is both so critical to Dr. Ordoover's testimony and so flawed, the CRB should reject Dr. Ordoover's conclusions about what royalty rates would be reasonable.

V. Dr. Ordoover's Discussion of How to Interpret the Statutory Criteria

31. Section III of Dr. Ordoover's written testimony provides his economic interpretation of the 801(b)(1) criteria. The presumed purpose of this section is to justify his calculations, but it fails to do so. First, by focusing on how to interpret the statutory criteria, Dr. Ordoover diverts attention from the economic problems with his estimates explained above. Even if Dr. Ordoover's interpretation of the statutory criteria were correct, those problems remain. Moreover, his economic interpretation of the statutory criteria is flawed.

A. Dr. Ordoover's Flawed Discussion of the Third Criterion

32. The third statutory criterion requires the Judges to take account of the “relative roles of the copyright owner and the copyright user in the product made available to the public with respect to relative creative contribution, technological contribution, capital investment, cost, risk, and contribution to the opening of new markets for creative expression and media for their communication.” (Ordoover,

¶11) Dr. Ordoover's discussion of the third statutory criterion is primarily about sunk costs. He observes (and, by implication, asserts to be relevant) that 1) in free markets, companies are often unable to recover their sunk costs, 2) record companies incur sunk costs, and 3) Sirius XM is not going to launch any new satellites in the period covered by this proceeding. From this, he concludes, "To the extent the Court finds the investment in satellites relevant, I believe that the issue appropriately is addressed under the rubric of the fourth policy objective." (Ordoover, ¶23)

33. Sirius XM's main role in making satellite radio available was to develop the necessary technology, to pay for the satellites and terrestrial repeaters, and to subsidize placement of receivers in automobiles. The third statutory criterion says that the rate the CRB sets should reflect this contribution, which presumably means that it should recognize that part of the monthly Sirius XM subscriber fee should compensate Sirius XM for this contribution. It is a basic principle of economics that firms will continue to operate in the short run as long as they can cover their variable (*i.e.*, non-sunk) costs and, as a consequence, market prices can fall, under some circumstances, to average variable cost. When this happens, the market price provides the seller no margin to contribute to its sunk costs. I would not interpret such an outcome as reflecting the contribution of the sunk costs to the provision of the service. Since some market prices might not reflect the contribution of satellite radio providers to the provision of the service, not all conceivable market-determined prices satisfy the third statutory criterion.¹²

34. Allocating a portion of the fee for satellite radio to cover Sirius XM's sunk costs would not, as Dr. Ordoover suggests, guarantee Sirius XM a competitive (or any)

¹² To be clear, the point I am making is not the fundamental problem with Dr. Ordoover's estimates. I have no reason to believe that the royalty rates for music rights for interactive internet music services are so high that they fail to reflect the contribution of the service providers to those services. The point is that the contribution of such services is quite different than the contribution of Sirius XM – and that it would therefore be inappropriate to apply the same percentage royalty for the music input.

return on its past investments. As I explain in more detail in Appendix C, any calculation of the long run average cost associated with Sirius XM's sunk costs necessarily reflects prior assumptions about the number of subscribers Sirius XM will attract over time. Implicitly recognizing a monthly contribution per subscriber that would have allowed Sirius XM an adequate *expected* rate of return on its investment, as the third statutory criterion would seem to require, would not guarantee Sirius XM that return today in light of Sirius XM's actual subscriber count and financial history. To actually earn a rate of return equal to a competitive rate of return, it would still have to attract an adequate number of subscribers consistent with its prior projections, which it has not done.

35. Dr. Ordovery's suggestion that the fourth statutory criterion (disruption) provides the appropriate framework for evaluating Sirius XM's sunk costs makes no sense and indeed gets matters completely backwards. To the extent that Sirius XM's investments in its satellite network are sunk, then it would rationally continue operation even if the CRB set rates that left it with no contribution to the recovery of those costs. This situation would violate the relative contribution factor even if it did not cause Sirius XM to cease operations.
36. In suggesting that consideration of sunk costs is relevant for assessing whether a royalty reflects the relative contribution of sunk inputs, I am not arguing that the statutory criteria suggest something other than a free-market standard, but I am adding a qualification. In most markets, a range of market prices is feasible, and that range is generally broader in the economic short run than it is in the economic long run. As a matter of economics, I read the third statutory criterion as restricting rates to those that are sustainable in the economic long run. Such prices would ensure that all participants would still have voluntarily engaged in the market transactions needed to make satellite services available had they been aware of the rates when they made the decisions to enter into those transactions – and avoid the situation where a post hoc rate increase allows music rights owners

to expropriate that portion of per-subscriber revenue that the service provider expected to cover capital costs when making its initial capital investment.¹³

B. Dr. Ordovery's Interpretation of the Second Criterion

37. Similar points apply to the second statutory criterion and Dr. Ordovery's discussion of it. Again, to the extent that one argues that the statutory criteria are identical to or consistent with a free market standard, the question one needs to address is whether free market rates would necessarily "afford the copyright owner a fair return for his creative work and the copyright user a fair income under existing economic conditions." As Dr. Ordovery points out, "fair return" and "fair income" are not terms of art in economics and I agree with Dr. Ordovery that a reasonable economic interpretation of a "fair outcome" is one that the participants would voluntarily accept. For example, suppose hypothetically that every satellite radio subscriber would, if satellite radio were unavailable, subscribe to non-interactive internet radio. Suppose further that music royalties for subscription non-interactive internet radio are \$0.75 per subscriber month. Given these assumptions, any royalty rate for satellite radio below \$0.75 per subscriber month would be unfair to the copyright owner because it would not compensate it for the opportunity cost of the royalties it would otherwise get from non-interactive internet radio. The only qualification I would add is that the interaction must be voluntary even in the long run. In other words, any party that has incurred sunk costs might voluntarily accept interactions in the short run that it would not have agreed to in the long run had it been aware of the terms prior to incurring sunk

¹³ A problem with interpreting the statutory criteria as being synonymous with a free market rate is that doing so begs the question of why Congress created a compulsory license rather than simply leaving rate determination to the market or adopting a Willing Buyer / Willing Seller standard as it did for the webcasting. See Final Rule and Order, Digital Performance Right in Sound Recordings and Ephemeral Recordings, Docket No. 2009-1 CRB Webcasting III, published in 76 Federal Register 13026, 13028, March 9, 2011 (*Webcaster III*).

costs, and it would be “unfair” to set the rate for the music input at a level that necessarily would have *prevented* such investment in the first instance.

C. Reprise

38. Dr. Ordoover’s main message in his discussion of the meaning of the first three statutory criteria is: 1) sunk costs are sunk; 2) in free markets, firms do not necessarily recover their sunk costs; and, therefore, 3) the statutory criteria do not require the CRB to be concerned with whether the music royalties it sets will afford Sirius XM a contribution from each subscriber to cover the long run cost of the satellite network.
39. This message is misleading. A substantial fraction of Sirius XM’s contribution to the provision of satellite radio – and a substantial portion of the revenue earned from each subscriber – reflects sunk costs. The CRB does not have to guarantee Sirius XM a satisfactory return on its investment on an aggregate basis to recognize that a substantial portion of Sirius XM’s monthly subscription fee, on a per-user basis, must be reserved to cover these sunk costs in order to “afford” Sirius XM the reasonable prospect of a market return (viewed *ex ante*). Once one recognizes this point, the music royalty necessarily has to be a smaller fraction of the satellite radio subscription price than it is for interactive internet music services, even ignoring the higher value of music rights for interactive services relative to those for non-interactive services.

VI. Mr. Sidak’s Testimony

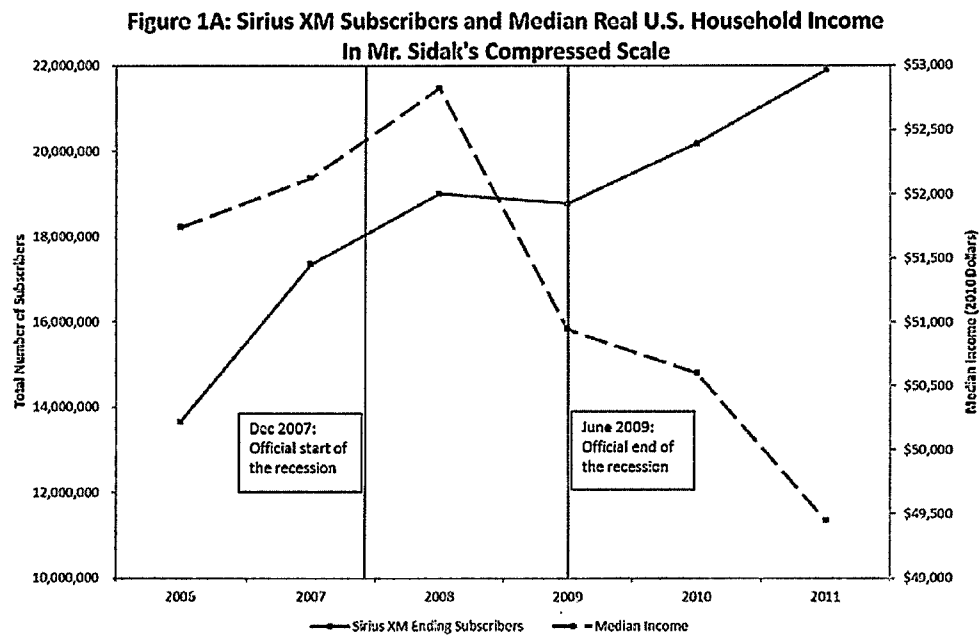
40. I now turn to Mr. Sidak’s testimony. In brief, he argues that not only can Sirius XM afford the rates SoundExchange proposes but that these rates will provide Sirius XM with a “fair income.” He bases these arguments on his conclusion that Sirius XM has monopoly power, that the merger of Sirius and XM increased its monopoly power, that Sirius XM faces no competition from substitutes that constrain its pricing, and even that Sirius XM is “relatively impervious” to

macroeconomic downturn. (Sidak, Section II). As evidence of Sirius XM's market power, Mr. Sidak has put forward estimates of Tobin's q , which is one way economists measure monopoly power. (Sidak, ¶30)

A. Mr. Sidak's Analysis of the Impact of Macroeconomic Factors on Sirius XM

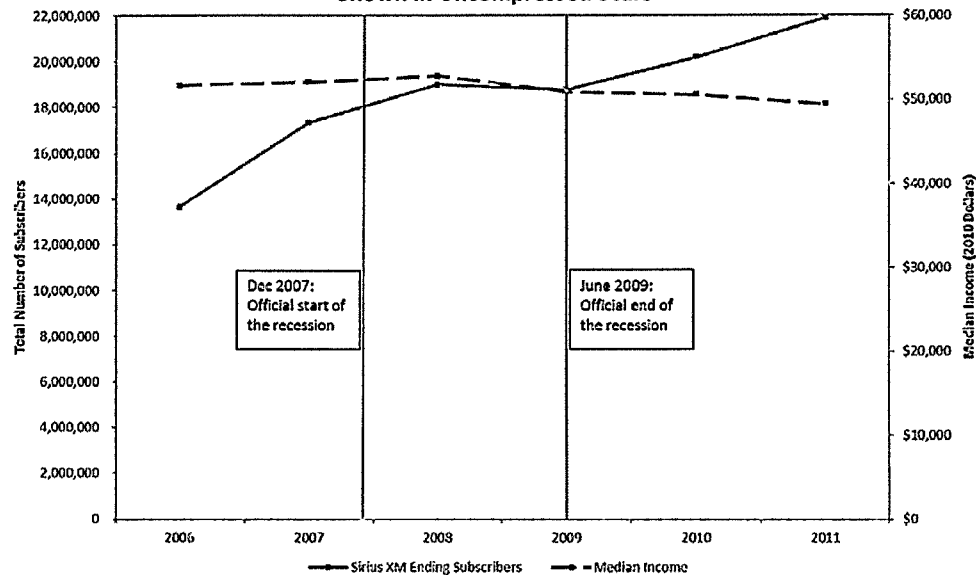
41. Before getting to Mr. Sidak's estimates of Tobin's q , it is worth noting several blatant instances in which Mr. Sidak's conclusions both reflect deeply flawed economic analysis and defy common sense.
42. The title of Section II of Mr. Sidak's report is, "Sirius XM Is Relatively Impervious to Macroeconomic Downturns." It would be hard to overstate how stunning a result this would be if it were so. Of course, it is not. Indeed, the effect of the contraction on Sirius XM's subscribers is clearly evident (at least to a trained eye) in Mr. Sidak's Figure 1. As it shows, Sirius XM's subscriber count was growing dramatically up to the start of the recession. That growth rate slowed and then even actually turned downward by the official end of the recession before resuming growth (albeit at a slower pace) as the tepid recovery took hold. Given this clear and significant drop-off in the rate of subscriber growth experienced by Sirius XM during the recession, as compared to the growth prior to the recession, it is hard to fathom how Mr. Sidak concludes that Sirius XM is "impervious to macroeconomic downturns."
43. Mr. Sidak's Figure 2, which he uses to try to reinforce his point, is deceptive. It appears to show that the decline in Sirius XM subscribership during the great contraction was small relative to the decline in median income. But, he generates this appearance by choosing a right-hand scale for the income series that ranges (in thousands of 2010 dollars) from \$49.0 to \$53.0. My Figure 1A is my reproduction (using his scaling) of Mr. Sidak's Figure 2. My Figure 1B represents the same information but using a scale for both series that starts at 0. Whether or not Mr. Sidak did so intentionally, his choice of a compressed scale,

which created the appearance of a large change, is a well-known technique for presenting empirical findings in a misleading way. The impression created by Figure 1A is that whatever decline Sirius XM suffered during the economic contraction, it was modest compared to the apparently dramatic reduction in personal income. As Figure 1B makes clear, however, the decline in personal income was not nearly as dramatic as the scaling in Figure 1A makes it appear.



Note:
Mr. Sidak's Figure 1 and Figure 2 use quarterly data for ending subscribers, while this figure uses yearly data for ending subscribers as of 12/31 in each year.
Sources:
1. Sirius XM Radio Inc. Form 10-K, 2008 and 2011.
2. U.S. Census Bureau, Current Population Survey, Income Statistics, Table H-6, Regions - All Races by Median and Mean Income: 1975 to 2010, available at <http://www.census.gov/hhes/income/data/historical/household/>.

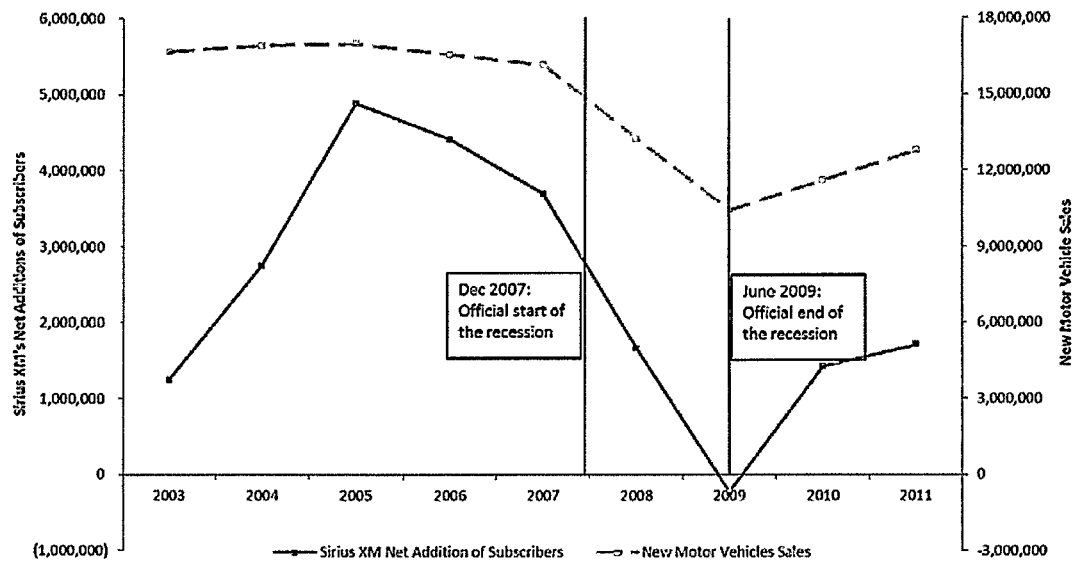
**Figure 1B: Sirius XM Subscribers and Median Real U.S. Household Income
Shown in Uncompressed Scale**



Note:
Mr. Sidak's Figure 1 and Figure 2 use quarterly data for ending subscribers, while this figure uses yearly data for ending subscribers as of 12/31 in each year.
Sources:
1. Sirius XM Radio Inc. Form 10-K, 2008 and 2011
2. U.S. Census Bureau, Current Population Survey, Income Statistics, Table H-6, Regions - All Races by Median and Mean Income: 1975 to 2010, available at <http://www.census.gov/hhes/www/income/data/historical/household/>.

44. As if there were any doubt about the matter, my Figure 2 is a time plot of new car sales in the United States and the change in the number of subscribers to satellite radio. As it shows, the two series are highly correlated. The dramatic reduction in new subscribers in 2008 and 2009 mirrors the drop in new cars sales. This finding should come as no surprise. A critical aspect of Sirius XM's business is its agreements with automobile manufacturers to install satellite radios in new vehicles. Key assumptions in Sirius XM's financial projections are the rate of new car sales and the fraction of new car buyers who Sirius XM successfully converts to paid subscriptions. Mr. Sidak's expert opinion that satellite radio is relatively impervious to economic downturns is simply wrong.

Figure 2: Sirius XM's Net Addition of Subscribers and U.S. New Motor Vehicle Sales



Notes:
 1. The net addition of subscribers = gross subscriber additions - number of deactivated subscribers.
 2. Net addition of subscribers data for 2003-2005 is the sum of Net addition from Sirius and XM. Net addition of subscribers data for 2006-2011 is from Sirius XM Radio Inc.
 3. New motor vehicle sales include new car sales and new light-truck sales.
 Sources:
 1. XM Satellite Radio Holdings Inc. and Sirius Satellite Radio Inc. Form 10-K, 2005. Sirius XM Radio Inc. Form 10-K, 2003 and 2011.
 2. Automotive News, 2006-2011 Market Data. <http://www.autonews.com/>, accessed on June 25, 2012.

B. Mr. Sidak's Analysis of the Competition Faced by Sirius XM is Flawed

45. Section III of Mr. Sidak's report argues that Sirius XM can afford the rates SoundExchange is proposing because it does not face significant business risk. Most of this section is devoted to risk from competitors (Sidak, ¶41).
46. In it, he asserts that "[T]errestrial radio does not constrain Sirius XM's prices or subscribership because of the implicit cost to listeners of advertisements on music channels" (Sidak, ¶45). While it is not at all clear how the first half of this sentence follows from the second, it cannot be the case that the implicit cost to listeners of advertisements on music channels is high. Internet radio services such as Pandora offer an advertising-supported free service and a subscription service that is free of advertising and includes other enhancements. The vast majority of Pandora users tolerate the advertisements to listen for free even though the

subscription price is only \$3 per month. That is quite strong evidence of how little many users are willing to pay to avoid advertisements.

47. Other advantages of satellite radio that Mr. Sidak goes on to describe are the greater variety of programming (including programming with indecent content under the current FCC precedent) and its availability outside the reach of terrestrial radio stations (Sidak, ¶47). There is no doubt that Sirius XM has attributes that distinguish it from terrestrial radio. If it did not, no one would subscribe. But, from his observations about why terrestrial radio is not a perfect substitute for satellite radio, Mr. Sidak concludes that terrestrial radio does not constrain Sirius XM's pricing at all (Sidak, ¶48). Under this flawed economic logic, one could conclude that Pepsi does not constrain the pricing of Coke, or to use an example more closely related to Mr. Sidak's experience, that basic cable networks do not constrain the pricing of premium networks. This is obviously not the case.

Mr. Sidak devotes another portion of this section to arguing that the cell phone delivery of internet radio does not pose a risk to Sirius XM. As he points out, to listen to internet radio in a car over a cell phone, one must figure out how to connect a cell phone to a car audio system and incur cell phone usage charges (Sidak, ¶62). While both factors may place some limitations on the use of internet radio services over cell phones in cars, it simply does not follow that Sirius XM faces no competitive threat from these technologies. Also, it does not seem to occur to Mr. Sidak that the advantages of satellite radio that might help it withstand competition from internet radio delivered over cell phones reflect its investments in its distribution network and in getting satellite radios installed in cars.

C. Mr. Sidak's Claim that Sirius XM has Market Power is Flawed

48. Mr. Sidak concludes that the merger of Sirius and XM increased Sirius XM's market power by giving it a monopoly in satellite radio. He argues that the price guarantees Sirius XM gave the FCC initially constrained this alleged market power, and the sunset of those provisions now gives it an unconstrained monopoly. He cites Sirius XM's imposition of the MRF and its recent rate increase from \$12.95 to \$14.49 as evidence that Sirius XM now has unconstrained monopoly power (Sidak, ¶25). He also cites the reduction in other content licensing fees as evidence that Sirius XM can now afford higher music licensing fees.

49. None of these conclusions or inferences is warranted. First, Sirius XM was permitted to impose the music royalty fee to reflect cost (and, indeed, marginal cost) increases.¹⁴ We would expect marginal cost increases to affect prices in competitive markets, so Sirius XM's decision to pass on higher royalty costs is not evidence of market power. Furthermore, the fact that a company chooses to increase its prices to reflect higher costs does not in any way imply that the cost increase fails to harm the company. It is a general principle in economics that a cost increase, even for a firm with some discretion over its price, lowers profits.

50. Second, XM had projected a price increase before the prospect of the merger arose. A long term plan from 2005 projects a price increase to \$14.95 in 2009.¹⁵ The price concession to the FCC caused it to postpone the price increase. The fact that, when Sirius XM did increase its rates in 2012, it did not raise them

¹⁴ See Karmazin ¶9.

¹⁵ A 2005 XM Long Term Strategic Plan assumes a base subscription price increase from \$12.95 to \$14.95 will be in effect in 2009. See SXM_CRB_DIR_00000011, "LTP v6.xls."

above what it had planned well before the merger is evidence that the merger did not result in market power for Sirius XM.¹⁶

51. According to data published by the National Association of Theater Owners, the average price of a movie ticket, which is another entertainment product, increased from \$6.41 in 2005 to \$7.89 in 2010.¹⁷ The increase of 23% is about the same percentage increase as Sirius XM put into place (including the MRF). While just one piece of evidence, it illustrates how careful one must be about automatically inferring market power from price increases. Prices can change for many reasons other than changes in market power. Without a thorough examination of other explanations (like costs and product improvements), inferring market power from a price increase is not warranted.
52. In addition, the FCC and the Department of Justice were well aware that they were reducing the number of satellite radio providers from two to one. Had they believed that satellite radio constituted a relevant market for merger review, they likely would have blocked the merger. Their decision to allow the merger and to give Sirius XM full pricing flexibility starting in 2012 reflected their judgment that Sirius XM faces competition.¹⁸
53. One important reason cited by the Department of Justice for closing its review of the Sirius XM merger was that most satellite radios are sold pre-installed in cars, and that prior to the merger Sirius and XM each had contracts with auto companies that gave one or the other exclusive rights to have their radios installed (USDOJ, p. 1). Thus consumers could get GM cars with XM radios, but not with

¹⁶ XM made those projections before it was aware of the royalty increases that gave rise to the MRF. With the MRF, Sirius XM did increase its price relative to XM's 2005 expectations, but the bigger increase is attributable entirely to an increase in cost.

¹⁷ See National Association of Theatre Owners data, available at <http://www.natooonline.org/statisticstickets.htm>, last accessed June 26, 2012.

¹⁸ Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc., March 24, 2008. (USDOJ)

Sirius radios, while Ford customers could only buy a car with a pre-installed Sirius radio. For a customer buying a new GM car and choosing whether to get an XM satellite radio or to continue as a paying subscriber once the trial subscription expires, the choice is between XM versus over-the-air radio, CDs, MP3 players plugged into the aux port on the radio, internet based services on mobile phones, and so on, but not between XM and Sirius. As the DOJ noted, to a significant degree, the merger did not change the competitive environment faced by XM and Sirius when it comes to customers choosing whether or not to subscribe (USDOJ, p. 2).

54. Finally, Mr. Sidak refers to rate reductions that Sirius XM has obtained with other sources of content, such as Howard Stern (Sidak, ¶29). Once again, he simply assumes that, because a price changed, it must be due to an exercise of market power, without recognizing that the price change might simply mean changing demand and supply conditions. In the case of content, Sirius XM may have reassessed the incremental value of some of its entertainment because of more modest projections of future subscribers and revenues. It is noteworthy that the very article that Mr. Sidak cites as evidence, when discussing the new Howard Stern contract, concludes, “Stern is so expensive, the savings from him leaving would pretty much offset the loss of subscribers.”¹⁹ In other words, under his new contract with Sirius XM following the merger, Howard Stern is still extracting the full incremental value of his contribution to satellite radio profits. Mr. Sidak has presented no evidence that these new contracts reflect market power versus a more sober forecast of the prospects for satellite radio.

55. The last issue related to Mr. Sidak’s report that I will discuss before turning to Tobin’s q is his Section IV, in which Mr. Sidak reports his estimates of how high

¹⁹ J. P. Mangalindan, “What Howard Stern’s \$400 Million Sirius Contract Means to the Street”, *FORTUNE*, Dec. 9, 2010, available at <http://money.cnn.com/2010/12/09/news/companies/Sirius-Stern-400-million.fortune/index.htm>, last accessed June 28, 2012.

music royalties could be before they would cause Sirius XM not to be able to cover its variable costs. Any rate below the 57.8% royalty he estimates would not, according to Mr. Sidak, be disruptive (Sidak, ¶68). In Mr. Sidak's view, disruption requires liquidation. Moreover, Mr. Sidak's interpretation of disruption makes a point that I made above with respect to Dr. Ordoover's testimony. If the fourth statutory criterion means that a rate is disruptive if it makes it impossible to cover variable costs, then that criterion does not provide a framework for considering Sirius XM's sunk costs and may violate the relative contribution and fair income/fair return criteria.

D. Mr. Sidak's Analysis of Tobin's q

56. Tobin's q is the ratio of the market value of a firm to the replacement value of its assets. James Tobin introduced it as a measure to predict rates of physical investment. Economic theory predicts that firms have an incentive to invest in physical assets when their market value exceeds their replacement value, *i.e.*, when q is greater than 1, and do not have an incentive to do so when q is less than 1. For example, when the market value of oil refineries exceeds their replacement value, oil refiners have an incentive to invest in additional refining capacity. If firms invest in a particular type of asset (like an oil refinery) when Tobin's q for that type of asset is greater than 1 and do not do so when Tobin's q is less than 1, we should expect over time for Tobin's q to gravitate to 1 for that type of asset. Tobin introduced q as a tool for modeling investment on a macroeconomic scale, and others have used it as a tool for modeling investment on the scale of an entire firm (which generally entails an aggregation of assets).²⁰ Industrial economists have used Tobin's q as a measure of profitability in studies of market power. In

²⁰ For elaborations, see Fumio Hayashi, "Tobin's marginal q and Average q : A Neoclassical Interpretation," *Econometrica*, January 1982, Vol. 50, pp. 213-24., and Lawrence H. Summers, "Taxation and corporate investment: A Q theory approach," *Brookings Papers on Economic Activity*, 1981:1, pp. 67-127.

those studies, the reason for measuring Tobin's q and assessing whether it is less than, equal to, or greater than 1 is to determine whether a firm has earned a return that is less than, equal to, or greater than a competitive rate of return, *i.e.*, a return that equals the return investors could earn in an alternative investment of comparable risk.

57. Mr. Sidak estimates Tobin's q for Sirius XM in two ways. Using the book value of Sirius XM's assets as his denominator, he estimates q to be 2.35. Using the depreciated value of just Sirius XM's property, plant, and equipment, he estimates a range of from 4.95 to 6.48. As both exceed 1, he concludes that Sirius XM has monopoly power and that it has earned above a fair rate of return (Sidak, ¶¶33, 34).
58. Mr. Sidak's use of Tobin's q in this proceeding is not appropriate. If Tobin's q for Sirius XM were greater than 1, that would imply that Sirius XM has earned a return greater than a competitive rate of return. For anyone familiar with the history of Sirius XM's financial results, this would be a surprising result if it were so. But even if it were so, the conclusion Mr. Sidak wants us to draw from it is not warranted.
59. When Sirius and XM invested in satellite radio, they did so in the presence of substantial uncertainty about, among other factors, demand for the service, the viability of satellite radio technology, the cost of delivering satellite radio, the appearance of competing technologies, interest rates, and so on. As Dr. Ordoover has observed, firms that undertake such investments often lose money (Ordoover, ¶21). Whenever a company risks a loss on an investment, its expected return cannot equal a competitive return without some prospect of getting above a competitive return (such that the upside of a return that exceeds the competitive rate of return offsets the downside of a return that is less than the competitive rate of return). As a result, a finding that a company ended up earning above a

competitive rate of return cannot and does not imply that its expected return when it made its investment exceeded a competitive return.²¹

60. Although a value of Tobin's q for Sirius XM above 1 would not mean what Mr. Sidak says it would mean, Mr. Sidak has not demonstrated that Tobin's q for Sirius XM is above 1. His estimates rely on the book value of Sirius XM's physical assets.²² There are at least two major problems with Mr. Sidak's calculation. First, the book value of Sirius XM's assets reflects straight-line accounting depreciation. As I explain in more detail in Appendix C, straight-line depreciation would be accelerated relative to properly-calculated economic depreciation even if Sirius XM's assets were expected to generate a constant stream of cash flows over time. With the likely time pattern of cash flows from satellite radio (which would start at a low level and only grow over time as the installed base of satellite radios increased), the assumptions underlying Mr. Sidak's estimates make even less sense. Second, the current book value of Sirius XM reflects non-cash impairment charges of several billion dollars arising from the merger. Impairment entails adjusting the book value of investments to reflect declines in their market value relative to the expectations implicit in the assumed depreciation. Once one adjusts the book value of assets to reflect their market value, the rationale for using Tobin's q as a measure either of market power or the incentive to invest largely disappears.

²¹ If Mr. Sidak's methodology were valid, then one could properly conclude that someone who hit the jackpot on a slot machine in a Las Vegas casino had market power.

²² As described above, Mr. Sidak estimates Tobin's q in two ways. One uses the book value of total assets as the denominator whereas the other uses the book value of just physical assets. If one is using Tobin's q to understand the incentive to invest in a particular type of asset, then it is appropriate to take the ratio of the market value to the replacement value of the individual asset. But if one is analyzing whether a firm has earned a rate of return above the competitive rate of return, one needs to look at the ratio of the market value of the firm to the replacement value of all its assets. Without controlling for other assets (as I sought to do in my own research), the ratio of the market value of the firm to the replacement value of just the physical assets is not informative.

61. A point that exemplifies why one cannot infer monopoly power on a case-by-case basis by whether q exceeds 1 is that the estimate of q can vary substantially depending on the timing of the estimate. The value of Sirius XM stock declined 90% from September 2008 to January 2009.²³ Tobin's q estimated in January 2009, which was after the merger, would plainly have been well below 1. Under Mr. Sidak's methodology for diagnosing market power (and ignoring for the sake of argument the defects in how he measures the denominator of q), Sirius XM did not have market power in January 2009 but does now.

VII. Conclusions

62. The testimony of both Dr. Ordoover and Mr. Sidak contain such fundamental flaws that the CRB should disregard both.
63. Dr. Ordoover's conclusion about reasonable royalty rates rests critically on his "constant percentage of revenue" assumption. The assumption ignores the obvious point that Sirius XM has invested substantial amounts in its distribution network and in subsidizing the placement of radios in cars, and it thus ignores (and expropriates) the portion of the monthly subscriber fee needed to give Sirius XM a reasonable prospect (viewed as of the time when the investment were made) of recovering the cost of those investments. It also ignores the fact that even if there were no difference in delivery costs between Sirius XM and the internet services, the rights at issue in this proceeding are substantially less valuable than those acquired by interactive services (and the rates should account for this difference in value).
64. A proper reading of the 801(b) factors, from an economic perspective, requires limiting the set of market based rates to those that are sustainable in the economic

²³ Yahoo Finance, Sirius XM Radio Inc. (SIRI)-NASDAQGS, from September 2, 2008 to January 2, 2009, available at <http://finance.yahoo.com/echarts?s=SIRI+Interactive#symbol=siri;range=20080902,20090101;compare=;indicator=volume;charttype=area;crosshair=on;ohlcvvalues=0;logscale=off;source=undefined>, last accessed June 28, 2012.

long run. This limitation ensures that the market transactions needed to make satellite services available would have been entered into voluntarily had the parties been aware of the rates when they entered into those transactions.

65. Neither Sirius XM's recent price increase nor its imposition of the MRF demonstrates that it has market power. Long run strategic plans developed prior to the merger reveal the expectation that subscription fees for satellite radio would increase over time. Costs explain the imposition of the MRF.
66. Mr. Sidak has substantially overestimated Tobin's q for Sirius XM. Even if, properly estimated, the current value exceeded 1, it would not follow that Sirius XM has monopoly power. Tobin's q can exceed 1 for reasons other than monopoly power.

Before the
UNITED STATES COPYRIGHT ROYALTY JUDGES
Washington, D.C.

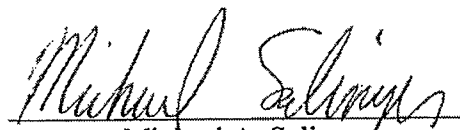
In the Matter of

DETERMINATION OF RATES AND TERMS
FOR PREEXISTING SUBSCRIPTION AND
SATELLITE DIGITAL AUDIO RADIO
SERVICES

)
)
)
) Docket No. 2011-1
) CRB PSS/Satellite II
)
)

DECLARATION OF MICHAEL A. SALINGER

I, Michael A. Salinger, declare under penalty of perjury that the statements contained in my Corrected Written Rebuttal Testimony in the above-captioned matter are true and correct to the best of my knowledge, information and belief. Executed this 9th day of August 2012 at Boston, Massachusetts.


Michael A. Salinger

Michael A. Salinger
Senior Academic Adviser

PhD Economics
Massachusetts Institute of
Technology

BA Economics
Yale University

Dr. Michael A. Salinger is a senior academic adviser with the Competition Practice of CRA. He is also a professor of economics and Everett W. Lord Distinguished Faculty Scholar at the Boston University School of Management. From 2005 to 2007, he was Director of the Bureau of Economics at the FTC. He has consulted for private organizations and a variety of worldwide government agencies, including the EPA, the Federal Trade Commission, the Board of Governors of the Federal Reserve, and the Australian Competition and Consumer Commission. He has published articles on such issues as the structural determinants of market power, the statistical properties of firm growth, and the competitive effects of tying and vertical mergers and has served on the editorial boards of the *Review of Industrial Organization* and the *Journal of Industrial Economics*. Prior to joining CRA, he was a managing director in LECG's Cambridge office.

Professional history

April 2011	<i>Senior Academic Adviser, Charles River Associates</i>
2007–2011	<i>Managing Director, LECG</i>
1990–Present	<i>Professor of Economics (2001–Present)</i> <i>Associate Professor (1990–2001)</i> <i>Jacqueline J. and Arthur S. Bahr Professor in Management (2011)</i> <i>W. Everett Lord Distinguished Faculty Scholar (2007–2011)</i> <i>Chairman of Finance and Economics Department (2000–2004)</i> <i>Faculty Director of Undergraduate Program (1999–2000)</i> <i>Boston University School of Management</i>
2005–2007	<i>Director, Bureau of Economics, US Federal Trade Commission (while on leave from Boston University)</i>
1997–1998	<i>Visiting Associate Professor of Applied Economics, Sloan School of Management, MIT (while on leave from Boston University)</i>
1982–1990	<i>Associate Professor of Business Economics (1987–1990)</i> <i>Assistant Professor (1982–1987)</i> <i>Columbia University Graduate School of Business</i>
1985–1986	<i>Economist, Bureau of Economics, Antitrust Division, United States Federal Trade Commission (while on leave from Columbia)</i>

Academic publications

Michael A. Salinger and Miquel Ampudia, "Simple Economics of the Price-Setting Newsvendor Problem," *Management Science*, Volume 57, 2011, pp. 1996-8.

Michael A. Salinger, "Behavioral Economics, Consumer Protection, and Antitrust," *Competition Policy International*, Volume 6, 2010, pp. 65-86.

Michael A. Salinger, "Business Justification Defenses in Tying Cases," in Wayne Dale Collins (ed.), *ABA Section of Antitrust Law, Issues in Competition Law and Policy* (United States: ABA Section of Antitrust Law), Volume 3, 2008, pp. 1911-1928.

Keith A. Anderson, Erik Durbin, and Michael A. Salinger, "Identity Theft," *Journal of Economic Perspectives*, Volume 22, 2008, pp. 171-192.

David S. Evans and Michael A. Salinger, "The Role of Cost in Determining When Firms Offer Bundles and Ties," *Journal of Industrial Economics*, Volume 56, 2008, pp. 143-168.

Michael A. Salinger, "The Legacy of Matsushita," *Loyola University Chicago Law Journal*, Volume 38, 2007, pp. 475-490.

Michael A. Salinger, Pauline M. Ippolito, and Joel L. Schrag, "Economics at the FTC: Pharmaceutical Patent Dispute Settlements and Behavioral Economics," *Review of Industrial Organization*, Volume 31, 2007, pp. 85-105.

David S. Evans and Michael Salinger, "Curing Sinus Headaches and Tying Law: An Empirical Analysis of Bundling Decongestants and Pain Relievers," in Jay Pil Choi, ed., *Recent Developments in Antitrust: Theory and Evidence* (Cambridge: MIT Press), 2007, pp. 91-124.

Keith A. Anderson, Christopher J. Garmon, Michael A. Salinger, David R. Schmidt, and John M. Yun, "Economics at the FTC: Data Intensive Mergers and Policy R&D," *Review of Industrial Organization*, Volume 29, 2006, pp. 327-348.

Dongfeng Fu, Sergey V. Buldyrev, Michael A. Salinger, and H. Eugene Stanley, "Percolation Model for Growth Rates of Aggregates and Its Application for Business Firm Growth," *Physical Review E*, Volume 74, 036118, September 2006.

Alden Abbott and Michael A. Salinger, "Learning from the Past: The Lessons of Vietnam, IBM, and Tying," *Competition Policy International*, Volume 2, 2006, pp. 3-19.

D.S. Evans, A.J. Padilla, and M. Salinger, "A Pragmatic Approach to Identifying and Analyzing Legitimate Tying Cases," *European Competition Law Annual 2003: What is an Abuse of a Dominant Position?* (Oxford: Hart Publishing).

David S. Evans and Michael Salinger, "Why Do Firms Bundle and Tie? Evidence from Competitive Markets and Implications for Tying Law," *Yale Journal on Regulation*, Volume 22, 2005, pp. 37-89.

Michael Salinger, "Shareholder Class Actions After the Crash: Statistical and Case Evidence on the Effect of the Private Securities Litigation Reform Act," *The Financier*, Volume 10, 2003, pp. 8-24.

D.S. Evans and M. Salinger, "Competition Thinking at the European Commission: Lessons from the Aborted GE-Honeywell Merger," *George Mason Law Review*, Volume 10, 2002, pp. 489–527.

K.N. Hylton and M. Salinger, "Reply to Grimes: Illusory Distinctions and Schisms in Tying Law," *Antitrust Law Journal*, Volume 70, 2002, pp. 231–246.

K.N. Hylton and M. Salinger, "Tying Law and Policy: a Decision Theoretic Approach," *Antitrust Law Journal*, Volume 69, 2001, pp. 469–526.

"Lowering Prices with Tougher Regulation: Forward-Looking Costs, Depreciation, and the Telecommunications Act of 1996," in Michael Crew (ed.), *Regulation Under Increasing Competition* (Boston: Kluwer Academic Publishers) 1998, pp. 45–61.

Michael Salinger, "Regulating Prices to Equal Forward-Looking Costs: Cost-Based Prices or Price-Based Costs?" *Journal of Regulatory Economics*, September 1998, Volume 14, pp. 149–63.

L.A.N. Amaral, S.V. Buldyrev, S. Havlin, M.A. Salinger, and H.E. Stanley, "Power Law Scaling for a System of Interacting Units with Complex Internal Structure," *Physical Review Letters*, Volume 80, 1998, pp. 1385–1388.

L.A.N. Amaral, S.V. Buldyrev, S. Havlin, H. Leschhorn, P. Maass, M.A. Salinger, H.E. Stanley, and M.H.R. Stanley, "Scaling Behavior in Economics: I. Empirical Results for Company Growth," *Journal Physique I France*, April 1997, Volume 7, pp. 621–633.

S.V. Buldyrev, L.A.N. Amaral, S. Havlin, H. Leschhorn, P. Maass, M.A. Salinger, H.E. Stanley, and M.H.R. Stanley, "Scaling Behavior in Economics: II. Modeling of Company Growth," *Journal Physique I France*, April 1997, Volume 7, pp. 635–650.

Michael Salinger, "Buying and Banking on Prospective Returns in Telecommunications," in E.M. Noam and A.J. Wolfson (eds.), *Globalism and Localism in Telecommunications* (Amsterdam: Elsevier Science) 1997, pp. 289–296.

M.H.R. Stanley, L.A.N. Amaral, S.V. Buldyrev, S. Havlin, H. Leschhorn, P. Maass, M.A. Salinger, and H.E. Stanley, "Scaling Behaviour in the Growth of Companies," *Nature*, Volume 379, February 29, 1996, pp. 804–806.

M. Klass and M.A. Salinger, "Do New Theories of Vertical Foreclosure Provide Sound Guidance for Consent Agreements in Vertical Merger Cases," *Antitrust Bulletin*, Volume 40, Fall 1995, pp. 667–698.

M.H.R. Stanley, S.V. Buldyrev, S. Havlin, R. Mantegna, M.A. Salinger, and H.E. Stanley, "Zipf Plots and the Size Distribution of Firms," *Economics Letters*, September 1995, pp. 453–457.

Michael Salinger, "A Graphical Analysis of Bundling," *The Journal of Business*, Volume 68, January 1995, pp. 85–98.

Michael Salinger, "Value Event Studies," *Review of Economics and Statistics*, Volume 74, November 1992, pp. 671–677.

Michael Salinger, "Standard Errors in Event Studies," *Journal of Financial and Quantitative Analysis*, Volume 27, March 1992, pp. 39–53.

Michael Salinger, "Vertical Mergers in Multi-Product Industries and Edgeworth's Paradox of Taxation," *Journal of Industrial Economics*, Volume 40, September 1991, pp. 545–556; Reprinted in Louis Philips (ed.), *Applied Industrial Economics* (Cambridge: Cambridge University Press) 1998.

Michael Salinger, "The Concentration-Margins Relationship Reconsidered," *Micro-Brookings Papers on Economic Activity*, 1990, pp. 287–321.

Michael Salinger, "Stock Market Margin Requirements and Volatility: Implications for Regulation of Stock Index Futures," *Journal of Financial Services Research*, Volume 3, December 1989, pp. 121–138.

Michael Salinger, "The Meaning of 'Upstream' and 'Downstream' and the Implications for Modeling Vertical Mergers," *Journal of Industrial Economics*, Volume 37, June 1989, pp. 373–387.

Michael Salinger, "Vertical Mergers and Market Foreclosure," *Quarterly Journal of Economics*, Volume 103, May 1988, pp. 345–356.

Michael Salinger, "Tobin's q , Unionization, and the Concentration-Profits Relationship," *Rand Journal of Economics*, Volume 15, Summer 1984, pp. 159–170.

M.A. Salinger and L.H. Summers, "Tax Reform and Corporate Investment: A Microeconomic Stimulation Study," in M. Feldstein (ed.), *Behavioral Stimulation Methods in Tax Policy Analysis*, University of Chicago Press, 1984, pp. 247–281.

Other publications/interviews/published transcripts

Michael Salinger, "The New DOJ/FTC Horizontal Merger Guidelines," *The Corporate Counselor*, vol. 25, 2011, p. 1 ff.

Michael Salinger, " 'Pay for Delay' Can Harm Consumers," *The Wall Street Journal* (letter), October 7, 2010.

Michael Salinger, "Introduction to Chapters VII and IX of Augustin Cournot, *Researches into the Mathematical Principles of the Theory of Wealth*," *Competition Policy International*, Vol. 4, 2008, pp. 275–82.

Michael Salinger, "Economic Analysis of Competition Practices in the EU and US: A View from Chief Economists," *Competition Policy International*, vol. 3, 2007, pp. 81–98.

"Four Essential Points About Antitrust Enforcement," *The Wall Street Journal* (letter), October 6, 2007.

"Interview with FTC Director of the Bureau of Economics Michael Salinger," *The Antitrust Source*, December 2006, available at <http://www.abanet.org/antitrust/at-source/06/12/Dec06-Salinger12=19f.pdf>.

"The Current State of Economics Underlying Section 2: Comments of Michael Katz and Michael Salinger," *The Antitrust Source*, December 2006, available at <http://www.abanet.org/antitrust/at-source/06/12/Dec06-BrownBag.pdf>.

Michael Salinger, "Give Your Cabdriver a Big Fat Tip," *The Wall Street Journal*, June 24/25, 2006, pg. A10.

Michael Salinger and Paul Pautler, "The Bureau of Economics at the US Federal Trade Commission," *Global Competition Review*, April 2006, pp. 3–5.

"Interview: Michael Salinger," *Global Competition Review*, 9 November 2005.

"Commentary," *The Review of Futures Markets*, Volume 10, 1991, pp. 398–402.

"Comment," in J. Coffee, L. Lowenstein, and S. Rose-Ackerman (eds.), *Knights, Raiders, and Targets: The Impact of Hostile Takeovers*, Oxford University Press, 1988, pp. 71–73.

Speeches as Director of the Bureau of Economics

"Economics Supporting the Twin Missions of the FTC," American Bar Association 55th Antitrust Spring Meeting, Breakfast with the Bureau Directors, JW Marriott Hotel, Washington, DC, April 20, 2007.

"Concluding Remarks for Energy Markets in the 21st Century: Competition Policy in Perspective," Washington, DC, April 12, 2007.

"Prepared Remarks on the Relationship between Antitrust and Regulation and on the Effects-Based Analysis," Presented before the Jevons Society, University College of London, United Kingdom, February 21, 2007.

"The Legacy of Matsushita: Has this Thing Called Economics Gotten Way Out of Hand?" Presented at Matsushita at 20, Loyola University School of Law, Institute for Consumer Antitrust Studies, Chicago, September 29, 2006.

"Looking for the Keys Under the Lamppost: Insights from Economics into Standards for Unilateral," Conduct ABA Section of Antitrust Law, Economics and Section 2 Committees Brown Bag, Washington, DC, FTC Conference Center, July 24, 2006.

"Consumer Protection Economics at the FTC," Prepared remarks for the Chief Economist Roundtable at the International Industrial Organization Conference, Boston, MA, April 8, 2006.

"Assessing Whether What We Know Is So," Presentation before the American Bar Association, 54th Antitrust Law Spring Meeting, Breakfast with the Bureau Directors, JW Marriott Hotel, Washington, DC, March 31, 2006.

"Moneyball and Price Gouging," Boston Bar Association Antitrust Committee, Boston, MA, February 27, 2006.

"Can Economics Bridge the Atlantic? Monopolization Under Section 2, Dominance Under Article 82, and Fouls in Football," George Mason University Fall 2005 Antitrust Symposium, Washington, DC, September 20, 2005.

"Four Questions About Horizontal Merger Enforcement," American Bar Association Antitrust Section Economics Committee Brown Bag Presentation, Washington, DC., September 14, 2005.

"Is It Live Or Is It Memorex? Models of Vertical Mergers and Antitrust Enforcement Association of Competition Economics (ACE) Seminar on Non-Horizontal Mergers," Competition Commission, London, UK, September 7, 2005, and Fondation Universitaire, Brussels, Belgium September 8, 2005.

"Challenges in Identifying Anticompetitive Dominant Firm Behavior," National Economic Research Associates (NERA) 2005 Antitrust and Trade Regulation Seminar, Santa Fe, New Mexico, July 7, 2005.

Congressional and commission testimony

"Petroleum Industry Consolidation," Joint Economic Committee of Congress, May 23, 2007.

"Sports Programming and Cable Distribution: The Comcast/Time Warner/Adelphia Transaction," US Senate, Judiciary Committee, December 7, 2006.

"Prepared Remarks of Dr. Michael A. Salinger" (on efficiencies in the treatment of horizontal mergers), Antitrust Modernization Commission, November 17, 2005.

"Testimony of Michael A. Salinger before the Senate Commerce, Science, and Transportation Committee, Subcommittee on Communications," Media Ownership: Diversity and Concentration, US Senate Hearings 101-357, 1989, pp. 97-107.

Litigation and regulatory testimony, affidavits, and reports

Report and arbitration testimony for Daesang regarding breach of contract and fraud counterclaim by NutraSweet in *In Re: Claims of Daesang Corporation against The NutraSweet Company, et. al.* Ref: 15 641/VRO (International Court of Arbitration) (2011).

Rebuttal Report and Testimony on behalf of Live365 regarding compulsory license fees for non-interactive music webcasters, in the Matter of Digital Performance Rights in Sound Recordings and Ephemeral Recordings Docket No. 2009-1, CRB Webcasting III (Copyright Royalty Board) (2010).

Rebuttal Report and Testimony on behalf of Devotional Claimants regarding alternative methodologies for allocating copyright royalties paid by cable television operators for retransmission of distant television signals in the Matter of Distribution of 2004 and 2005 Copyright Funds Docket No. 2007-3 CRB CD 2004-2005 (Copyright Royalty Board) (2010).

Report on behalf of the Australian Competition and Consumer Commission in *ACCC v. PRK Corp Ltd & Ors*, regarding antitrust consequences of joint venture between automobile stevedores, No NSD 1703 OF 2007, (Federal Court of Australia, New South Wales District Registry) (2009).

Report and trial testimony on behalf of defendants in *Artie's Auto Body, Inc., et al. v. The Hartford Fire Insurance Company*, Docket No. X08-CV-03-0196141S (CLD) (Superior Court of Connecticut) (2009).

Report and deposition on behalf of defendants regarding class certification in *Universal Delaware, Inc., et al. v. Comdata Corporation*, Civil Action No. 07-1078-JKG (US District Court, Eastern District of Pennsylvania) (2009).

Report on behalf of plaintiffs regarding unfair trade practices in *Rapaport, et al. v. IDEX Online et al.* Index No. 04 CV 06626 (RJH) (US District Court, Southern District of New York) (2008).

Testimony on behalf of defendant regarding statistical analysis of shaving studies in *Schick Manufacturing, Inc., et al. v. The Gillette Company*, Civil Action No. 3-05-cv-174 (JCH) (United States District Court, District of Connecticut) (2005).

Affidavit on behalf of plaintiff regarding statistical analysis of shaving study in *Gillette Australia Pty. Ltd. v. Energizer Australia Pty. Ltd.* (Federal Court of Australia, New South Wales District) (2004).

Affidavit on behalf of defendant regarding statistical analysis of shaving study in *Wilkinson Sword GmbH v. Gillette Deutschland GmbH & Co.* (Hamburg District Court) (2004).

Peer Review for United States Environmental Protection Agency of BEN model of economic benefit from avoidance of environmental regulations (2003).

Report and deposition testimony regarding "reasonable" ASCAP fees for cable networks on behalf of *Turner Broadcasting in US v. ASCAP* in the Matter of the Application of Turner Broadcasting Systems, Inc., et al. for the Determination of Reasonable License Fees (US District Court, Southern District of New York) (2000).

Report and deposition testimony on damages on behalf of defendants in *Heineken Technical Services v. Charles Darby, Decotec International, Ltd. and Wolfgang Fiwek* regarding damage estimates for theft of trade secrets (US District Court, District of Massachusetts, Civil Action No. 98-CV-11952 JLT) (1999).

Reports on damages on behalf of Governor Pedro Rosselló and other officials of the Commonwealth of Puerto Rico regarding damage estimates in *El Dia, Inc., et al. v. Pedro Rosselló* (US District Court for the District of Puerto Rico, Civil Action No. 97-2841 JAF) (1999).

Report entitled "Pricing Flexibility in Exchange Access Reform" submitted by GTE, reply comments. Federal Communications Commission (CC Docket No. 96-262 et al.) (1997).

Direct and Rebuttal Testimony on behalf of Devotional Broadcasters in proceeding to determine the allocation of the royalties paid by cable operators for the retransmission of distant broadcast signals from 1990 to 1992. Direct testimony concerned conceptual approaches to allocate the funds. Rebuttal testimony critiqued an econometric study submitted by the Motion Picture Association of America (Copyright Arbitration Royalty Panel) (1996).

Reports for Turner Broadcasting on the treatment of affiliate transactions in cable television price regulations (Federal Communications Commission) (1994).

Written testimony on behalf of Devotional Broadcasters regarding appropriate procedures for allocating royalties paid by cable operators among different classes of programs on retransmitted broadcast signals (Copyright Arbitration Royalty Panel) (1993).

Deposition testimony for Long Lake Energy Corp. regarding market definition in monopolization suit against Niagara Mohawk Corporation (1991).

Affidavit concerning class certification in a class action suit against bottlers of Coke and Pepsi. Affidavit argued that a conspiracy to raise the price of colas sold on promotion to grocery stores affected soft drink prices in general (1989).

Report and trial testimony on behalf of Record Club of America regarding damages in a breach of contract suit against United Artists (US District Court, Southern District of New York) (1988).

Other professional activities/distinctions

Panelist, "Horizontal Merger Guideline Review Project," joint Department of Justice and Federal Trade Commission Workshop, New York, NY, December 8, 2009.

Panelist, "Section 5 of the FTC Act as a Competition Statute," Federal Trade Commission Workshop, Washington, DC, October 17, 2008.

Panelist, "FTC at 100: Into our Second Century," Federal Trade Commission Roundtable, Washington, DC, July 29, 2008.

Participant, Academic Consultants Meeting on Non-Traditional Financial Services, Federal Reserve Board, April 16, 2008.

Presenter, Fundamentals of Antitrust Economics, American Bar Association Antitrust Section Spring Meeting, 2007, 2008.

Editorial Board, *Journal of Industrial Economics*, 2002–2006, (Associate Editor, 1996–2002).

Editorial Board, *Review of Industrial Organization*, 2002–2005.

Special Consultant, National Economic Research Associates, 1994–2005.

Member, Science Advisory Board/Illegal Competitive Advantage, United States Environmental Protection Agency, 2004.

Broderick Prize for Service to Undergraduate Community, Boston University, 2004.

Who's Who in America (first listing in 2003).

Principal Investigator: "A Statistical Mechanics Approach to Coase's Theory of the Firm," National Science Foundation Grant SES-0113103, 8/1/01–7/31/02.

Courses taught

Boston University

Undergraduate: Modeling Business Decisions and Market Outcomes (course designer and director), Probability and Statistics, Business History

Masters: Quantitative Methods, Managerial Economics, Health Care Economics, Health Care Finance, Economics of Strategic Planning

Executive: Microeconomics (Korean Executive MBA), Macroeconomics

Doctoral: Cross-disciplinary Theory and Research

MIT

MBA: Microeconomics, Economics of Strategic Planning

Columbia

MBA: Business Economics, Economics of Strategic Planning, Econometrics, Industrial Organization

Doctoral: Microeconomics, Industrial Organization



Appendix B: Materials Relied Upon

Category

SEC Filings

Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 1999.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2000.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2001.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2002.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2003.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2004.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2005.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2006.
Sirius Satellite Radio Inc. Form 10-K for fiscal year ended December 31, 2007.
Sirius XM Radio Inc. Form 10-K for fiscal year ended December 31, 2008.
Sirius XM Radio Inc. Form 10-K for fiscal year ended December 31, 2009.
Sirius XM Radio Inc. Form 10-K for fiscal year ended December 31, 2010.
Sirius XM Radio Inc. Form 10-K for fiscal year ended December 31, 2011.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 1999.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2000.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2001.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2002.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2003.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2004.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2005.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2006.
XM Satellite Radio Holdings Inc. Form 10-K for fiscal year ended December 31, 2007.
Dell Inc. Form 10-K for fiscal year ended February 2, 2001.
Dell Inc. Form 10-K for fiscal year ended February 1, 2002.
Dell Inc. Form 10-K for fiscal year ended January 31, 2003.
Dell Inc. Form 10-K for fiscal year ended January 30, 2004.
Dell Inc. Form 10-K for fiscal year ended January 28, 2005.
Dell Inc. Form 10-K for fiscal year ended February 3, 2006.
Dell Inc. Form 10-K for fiscal year ended February 2, 2007.
Dell Inc. Form 10-K for fiscal year ended February 1, 2008.
Dell Inc. Form 10-K for fiscal year ended January 30, 2009.
Dell Inc. Form 10-K for fiscal year ended January 29, 2010.
Dell Inc. Form 10-K for fiscal year ended January 28, 2011.
Dell Inc. Form 10-K for fiscal year ended February 3, 2012.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2001.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2002.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2003.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2004.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2005.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2006.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2007.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2008.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2009.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2010.
Microsoft Corporation Form 10-K for fiscal year ended June 30, 2011.
Pandora Media, Inc. Form 10-K for fiscal year ended January 31, 2012.
CD Radio Inc. Form 10-K for fiscal year ended December 31, 1997.
CD Radio Inc. Form 10-K for fiscal year ended December 31, 1998.

Appendix B: Materials Relied Upon

Category

Testimony

Declaration of Melvin Karmazin, In the Matter of: Carl Blessing on behalf of Himself and Others Similarly Situated v. Sirius XM Radio Inc. before the United States District Court for the Southern District of New York, No. 1:09-cv-10035-HB ECF CASE, January 18, 2011.

SoundExchange Inc. Revised Amended Written Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1, CRB PSS/Satellite II, Statement of J. Gregory Sidak, March 26, 2012.

Sirius XM Radio Inc. Revised Amended Written Direct Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1 CRB PSS/Satellite II, Statement of Roger G. Noll, May 17, 2012.

SoundExchange Inc. Third Corrected and Amended Testimony before the United States Copyright Royalty Judges in Docket No. 2011-1, CRB PSS/Satellite II, Statement of Janusz Ordovery, June 13, 2012.

Hearing Transcript, June 14, 2012.

Client Documents and Bates-Stamped Documents

SXM_CRB_DIR_00000009, "Strat Plan (current)_v1b.xls."

SXM_CRB_DIR_00000011, "LTP v6.xls."

SX02 00088977-SX02 00089061, "Tab 015 Bryan Exhibit 3.pdf."

Legal Filings

Final Rule and Order, Determination of Rates and Terms for Preexisting Subscription Services and Satellite Digital Audio Radio Services, Docket No. 2006-1 CRB DSTRA, published in 73 Federal Register 4080, 4104, January 24, 2008.

Statement of the Department of Justice Antitrust Division on Its Decision to Close Its Investigation of XM Satellite Radio Holdings Inc.'s Merger with Sirius Satellite Radio Inc., March 24, 2008.

Final Rule and Order, Digital Performance Right in Sound Recordings and Ephemeral Recordings, Docket No. 2009-1 CRB Webcasting III, published in 76 Federal Register 13026, 13028, March 9, 2011.

Public Documents

Franklin M. Fisher and John J. McGowan, "On the Misuse of Accounting Rates of Return to Infer Monopoly Power," *The American Economic Review*, 1983, Vol. 73, pp. 82-97.

Fumio Hayashi, "Tobin's Marginal q and Average q: A Neoclassical Interpretation," *Econometrica*, January 1982, Vol. 50, pp. 213-24.

Harold Hotelling, "A General Mathematical Theory of Depreciation," *Journal of the American Statistical Association*, 1925, Vol. 20, pp. 340-353.

J. P. Mangalindan, "What Howard Stern's \$400 Million Sirius Contract Means to the Street", *FORTUNE*, Dec. 9, 2010, available at <http://money.cnn.com/2010/12/09/news/companies/Sirius-Stern-400-million.fortune/index.htm>, last accessed June 28, 2012.

Michael A. Salinger, "Regulating Prices to Equal Forward-Looking Costs: Cost-Based Prices or Price-Based Costs," *Journal of Regulatory Economics*, September 1998, Vol. 14, pp. 149-63.

Michael A. Salinger, "Tobin's q, Unionization, and the Concentration-Profits Relationship," *Rand Journal of Economics*, Vol. 15, Summer 1984, pp. 159-170.

Lawrence H. Summers, "Taxation and corporate investment: A Q theory approach." *Brookings Papers on Economic Activity*, 1981:1, pp. 67-127.

Automotive News, 2006-2011 Market Data. <http://www.autonews.com/>, accessed on June 26, 2012.

National Association of Theatre Owners data, available at <http://www.natooonline.org/statisticstickets.htm>, last accessed June 26, 2012.

U.S. Census Bureau, Current Population Survey, Income Statistics, Table H-6, Regions—All Races by Median and Mean Income: 1975 to 2010, available at <http://www.census.gov/hhes/www/income/data/historical/household/>, last accessed June 26, 2012.

Yahoo Finance, Sirius XM Radio Inc. (SIRI) - NASDAQGS, from September 2, 2008 to January 2, 2009, available at <http://finance.yahoo.com/echarts?s=SIRI+Interactive#symbol=siri;range=20080902,20090101;compare=;indicator=volume;charttype=area;crosshair=on;ohlcvvalues=0;logscale=off;source=undefined>, last accessed June 28, 2012.

APPENDIX C

to the Corrected Written Rebuttal Testimony of Michael A. Salinger

**RESTRICTED – SUBJECT TO PROTECTIVE ORDER
IN DOCKET NO. 2011-1 CRB PSS/SATELLITE II**

CERTIFICATE OF SERVICE

I, Consuelo Kendall, hereby certify that a copy of the foregoing public version of Sirius XM's Corrected Rebuttal Testimony of Dr. Michael A. Salinger was served on August 15, 2012 via email and overnight mail on the following parties:

Paul M. Fakler
ARENT FOX LLP
1675 Broadway
New York, New York 10019-5874
Phone: (212) 484-3900
Fax: (212) 484-3990
fakler.paul@arentfox.com

Counsel for Music Choice

Jared O. Freedman
JENNER & BLOCK LLP
1099 New York Ave., N.W.
Washington, D.C. 20001
Phone: (202) 639-6000
Fax: (202) 639-6066
jfreedman@jenner.com

Counsel for SoundExchange, Inc.

Consuelo A. Kendall
Consuelo Kendall